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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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02/18/2004

De-Sheng Tsai

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EXAMINER

COLE, ELIZABETH M

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

11/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,781	TSAI ET AL.	
	Examiner	Art Unit	
	Elizabeth M. Cole	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-24, 26-28 and 34-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24, 26-28, 34-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-24, 34-39 are rejected under 35 U.S.C. 103(a) as obvious over Suzuki et al, U.S. Patent No. 5,814,569 in view of Kozulla, U.S. Patent No. 5,882, 562. Suzuki discloses nonwoven fabrics comprising polypropylene conjugate continuous filaments, (spunbonded nonwovens), which are subjected to heating and drawing in order to form elastic nonwovens. See col. 3, lines 11-21, col. 4, lines 16-58. The nonwoven has the properties of 86% recovery from 100% elongation in the cross direction and has a ratio of elongation at break in the cross direction to the elongation at break in the machine direction of at least 8. See table 1 and the values for EC/EM as well as EEC 100%. The drawing treatment is performed at a temperature above the softening but below the melting point of the fibers. See col. 9, line 49 - col. 10, line 53. The draw rate is 10-80% and preferably 40-75%. See col. 11, lines 4-28. Suzuki does not disclose the claimed property of at least 60% recovery from a 150% elongation and does not disclose the claim strain rate. Further, with regard to the process limitation of the strain rate, the instant claims are drawn to a product. Product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product - by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product - by -

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process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe , 227 USPQ 964, 966 (Fed. Cir. 1985).

Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

3. Suzuki teaches that performing the process steps of subjecting a spunbonded nonwoven to heating and drawing at a temperature above the softening point but below the melting point of the fibers produces elasticity in the nonwoven even though the fibers employed to make up the nonwoven are not inherently elastic. Thus, even if Suzuki does not set forth an example which employs fibers which consist essentially of polypropylene which have the claimed properties, Suzuki does teach a method by which inherently non elastic fibers such as polyolefin fibers can be formed into nonwoven fabrics and treated so that the fabric has elasticity and recovery in the cross direction.

4. It is noted that the material of Suzuki would be capable of performing the intended uses of being used in garments, absorbent articles, etc. , especially since no further structure is set forth with regard to these claims. Further, Suzuki teaches at col.1 that such uses were known in the art as conventional for elastic nonwoven fabrics.

5. Suzuki differs from the claimed invention because while Suzuki teaches bicomponent fibers which comprise polypropylene, Suzuki teaches that

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monocomponent fibers suffer from drawback such as either degradation of the fibers during bonding or fiber slip during bonding as compared to bicomponent fibers. See col. 12, lines 65-67. Suzuki teaches a fabric which comprised 100% monocomponent polypropylene suffered from fiber slip during bonding and therefore produced lesser results, at least in part because the all polypropylene fabric had a lower basis weight. See comparative example 2 of Suzuki and the discussion at col. 19, lines 1-9. Kozulla teaches forming polypropylene fibers so that they have a skin/core structure so that the skin structure has a higher melt flow rate as compared to the core of the fiber. See col. 3, lines 31-50. Kozulla teaches that such fibers produce improvements in the cross direction including superior CD strength, elongation and toughness. See col. 3 lines 8-27. Kozulla teaches that the fibers having the skin/core structure have superior bond strength as compared with a conventional polypropylene fiber. See col. 5, lines 34-41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the polypropylene fibers of Kozulla having a skin/core structure wherein the skin has a higher melt flow rate as compared to the core to make the nonwoven fabrics of Suzuki, with the expectation that the fibers would produce a fabric having superior CD properties of strength, elongation and toughness as taught by Kozulla and would not suffer from issues of fiber slip or fiber degradation during bonding due to the skin/core structure which Suzuki teaches can produce problems with monocomponent fibers as compared to bicomponent fibers.

6. Once the skin/core polypropylene fibers of Kozulla were provided in the process and structure of Suzuki, it is reasonable to expect that the resulting product would have

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the claimed properties and/or that it would have been obvious to have optimized the various processing parameters through the process of routine experimentation in order to arrive at a fabric having the desired percent recovery from elongation at 150% and ratio of elongation at break in the CD to elongation at break in the MD of at least 8 as claimed.

7. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Kozulla as applied to claims above, and further in view of Morman et al, U.S. Patent Application Publication No. 2003/0100238. Suzuki discloses an elastic nonwoven fabric as set forth above, but does not disclose laminating the nonwoven to additional layers. Morman teaches that elastic nonwoven fabrics can be bonded to extensible or elastomeric films to provide laminates. See paragraph 0062-0069.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have bonded the fabric of Suzuki to a film as taught by Morman, in order to form a laminate having the additional properties of the film in combination with the nonwoven, such as improved strength, water barrier properties, etc

8. Applicant's arguments filed 7/16/09 have been fully considered but they are not persuasive. Applicant argues that Suzuki does not disclose an embodiment or example having the claimed properties of elasticity and recovery where the fibers consist essentially of polypropylene. The examiner agrees with this statement. However, Suzuki does teach a method by which elasticity, elongation and recovery are imparted to nonwoven spunbonded materials which comprise polyolefin fibers, (and other non elastic fibers such as polyesters), by heating and drawing the fibers in a process such

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as is disclosed in the instant specification. Suzuki does state that the results obtained when using a monocomponent polypropylene fiber are inferior to those obtained by using the conjugate fibers and attributes the inferior results mostly to the poor bonding. Suzuki discusses at col. 3, lines 38-52, that when monocomponent fibers are used, that either the temperature employed is too low for strong bonding to occur and the fabric collapses during drawing, or else the temperature is too high and the filaments completely collapse and holes and/or breaks form during drawing. Suzuki discusses that in comparative example 2, where monocomponent polypropylene fibers are used, that in addition to a low basis weight, that the heat setting of the filaments was insufficient and the filaments slipped out from the heat bonded areas at the time of bonding, (i.e., there was insufficient heat bonding of the nonwoven which collapsed during drawing). However, Kozulla teaches that by employing the all polypropylene fibers having the particular sheath/core structure disclosed, that a stronger nonwoven material can be formed, having improved properties of CD strength, elongation and toughness and improved thermal bonding. This teaching of Kozulla would provide a person of ordinary skill in the art with a reasonable expectation of success in forming an elastic fabric having excellent CD elasticity, strength, stretch and recovery by employing the particular fibers of Kozulla in the process of Suzuki. The person of ordinary skill in the art would have been able to vary processing parameters in order to arrive at a nonwoven having the desired elasticity, recovery from elongation, and ratio of elongation at break in the CD to elongation at break in the MD. Both Kozulla and Suzuki are concerned with providing excellent strength and elongation to nonwoven

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fabrics in the CD. Therefore, even though the examiner acknowledges the Suzuki does not teach the identical fabric having the claimed elasticity, recovery from elongation and ratio of elongation at break as claimed, the combination of Suzuki and Kozulla would provide a person of ordinary skill in the art a reasonable expectation of success at forming a fabric having high elasticity, strength, elongation and recovery in the CD by employing the fibers of Kozulla in the process of Suzuki.

9. Applicant argues that the cited evidence shows that the melting point of polypropylene does not vary as widely as the melt flow rate and that therefore the fibers of Kozulla would not produce a fabric having the claimed properties of the type shown by Suzuki with regard to the bi component fibers because there would not be a big enough difference between the melting point of the sheath and the melting point of the core. However, Kozulla teaches that the benefit of the particular all polypropylene fibers having the sheath/core configuration is that they produce a much stronger non woven, especially in the CD and that it produces superior thermal bonding. See col. 5. lines 33-41. Kozulla teaches that the CD strength and bond strength is superior compared with conventional polypropylene fibers. Since the problem identified in Suzuki with using monocomponent polypropylene fibers is that they did not form a strongly thermally bonded nonwoven, the person of ordinary skill in the art would have had a reasonable expectation that if the improved monocomponent fibers of Kozulla were substituted in the structure and general process of Suzuki, that the resulting fabric would have the improved properties of elasticity, recovery from elongation and ratio of elongation at break in the CD to the MD, especially since the fabric of Kozulla is

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described as having superior CD strength and bonding properties, whereas the monocomponent fibers were described in Suzuki as unsuitable because of their weak bonds and poor fabric strength.

10. Applicant argues that the examiner errs in stating that the properties claimed would inherently be present in the structure of Suzuki. This argument is persuasive and the rejection has been clarified to remove the previous language which was not applicable after the claims were amended to recite that the fibers consist essentially of polypropylene and to state that while Suzuki does not disclose the particularly claimed fibers having the particularly claimed properties, Suzuki does teach the general process by which inherently non elastic fibers can be formed into fabrics having excellent recovery from elongation, etc. Further, since Kozulla teaches an improved monocomponent fiber which produces a nonwoven fabric which has excellent thermal bonding properties, excellent CD strength and elongation, that there would have been a reasonable expectation of success for the person of ordinary skill in the art to have substituted the particular fibers of Kozulla for the fibers of Suzuki and to have adjusted the heat employed, etc., in view of the use of the different type of fibers, in the process of Suzuki, with the expectation of forming a fabric which comprised all polypropylene but which had excellent elongation, recovery from elongation, CD strength, etc.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794

e.m.c